

Work Order ID 130094

Monday, February 23, 2015 10:54:59 AM

130094

Page 1

Item ID: D4909-1

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Support

Start Date: 2/23/2015 Start Qty: 6.00

6

Cust Item ID:

Required Date: 2/23/2015 Req'd Qty: 6.00

6

Customer:

Reference:

Approvals: Process Plan: *MLJ*Date: *1502-23* Tooling:

Date:

Run Start ***NR1***

QC:

Date: SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr

Revision Nbr

D4909

A

100

0.00

100

HAAS CNC VERTICAL MACHINING #1

0.00

HAAS I

Memo

HAAS CNC vertical machine #1

Machine as per Folio FB209

Folio Rev: AADwg Rev: A

Deburr.

110

0.00

110

QC2- Inspect parts off machine FAI/FAIB

QC

Memo

Quality Control

*P 15-03-10**0**P 15-03-10**6*

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS <table style="width:100%;"> <tr> <td>Skid-tube ☐</td> <td>Crosstube ☐</td> <td>Water Jet ☐</td> <td>Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>	Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐															
Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐															
Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐															
Large Fab ☐	Composite ☐	Supplier ☐																

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY

Landing Gear ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Inspection Strip in Tube ☐ Marks/Chatter ☐ Turning Sequence ☐ Wave/Twist in Tube	General ☐ Bend ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Burrs ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Drawing ☐ Drill Holes ☐ Finish ☐ Fit/Function	☐ Folio/Program ☐ Grain ☐ Hardware ☐ Inspection Incomplete/Unqualified ☐ Instructions Incomplete/Unclear ☐ Misaligned/off center ☐ Mislabeled ☐ Misread ☐ Off-set ☐ Out of Calibration ☐ Out of Sequence	☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Positioned Wrong ☐ Power Loss/Surge ☐ Pressure/Forced ☐ Set-up ☐ Temperature/Cure ☐ Weld ☐ Wrong Stock Pulled ☐ Other
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Work Order ID 130094

Monday, February 23, 2015 10:54:59 AM

130094

Page 2

Item ID: D4909-1

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Support

Start Date: 2/23/2015 Start Qty: 6.00

6

Cust Item ID:

Required Date: 2/23/2015 Req'd Qty: 6.00

6

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

120

QC8- Inspect parts - second check

0.00

120

QC

Memo

0.00

Quality Control

DAS
14
9-89
15/03/11

130

Identify as per dwg & Stock Location **LG03** 0.00***130***

Packaging

Memo

0.00

Packaging

DAS
06
9-89

MAR 16 2015

140

QC21- Final Inspection - Work Order Release 0.00

140

QC

Memo

0.00

Quality Control

MCS 15-03-16

D15-3-16

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS <table style="width: 100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Crosstube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td style="border: none;"></td> </tr> </table>	Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐															
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Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY

Landing Gear ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Inspection Strip in Tube ☐ Marks/Chatter ☐ Turning Sequence ☐ Wave/Twist in Tube	General ☐ Bend ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Burrs ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Drawing ☐ Drill Holes ☐ Finish ☐ Fit/Function	☐ Folio/Program ☐ Grain ☐ Hardware ☐ Inspection Incomplete/Unqualified ☐ Instructions Incomplete/Unclear ☐ Misaligned/off center ☐ Mislabeled ☐ Misread ☐ Off-set ☐ Out of Calibration ☐ Out of Sequence
		☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Positioned Wrong ☐ Power Loss/Surge
		☐ Pressure/Forced Set-up ☐ Temperature/Cure ☐ Weld ☐ Wrong Stock Pulled ☐ Other

Picklist Print

Monday, February 23, 2015 10:55:03 AM

Page 1

Work Order ID: 130094

130094

Parent Item: D4909-1

D4909-1

Parent Item Name: Support

Start Date: 2/23/2015

Required Date: 2/23/2015

Start Qty: 6.00

Required Qty: 6.00

Comments: IPP REV:A NEW ISSUE 13-04-24 JLM VERIFIED BY:DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D4909-1TRN		Manufactured	No			100	Each	0.0000	1	6			

D4909-1TRN

Support Turning Detail

**

130095

3 JH 2015-03-03

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Crosstube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐
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Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
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Process									
Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY

Landing Gear ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Inspection Strip in Tube ☐ Marks/Chatter ☐ Turning Sequence ☐ Wave/Twist in Tube	General ☐ Bend ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Burrs ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Drawing ☐ Drill Holes ☐ Finish ☐ Fit/Function	☐ Folio/Program ☐ Grain ☐ Hardware ☐ Inspection Incomplete/Unqualified ☐ Instructions Incomplete/Unclear ☐ Misaligned/off center ☐ Mislabeled ☐ Misread ☐ Off-set ☐ Out of Calibration ☐ Out of Sequence	☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Positioned Wrong ☐ Power Loss/Surge ☐ Pressure/Forced ☐ Set-up ☐ Temperature/Cure ☐ Weld ☐ Wrong Stock Pulled ☐ Other
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DART AEROSPACE LTD		Work Order:	130094
Description: Support		Part Number:	D4909-1
Inspection Dwg: D4909	Rev: A	Page 1 of 1	

FIRST ARTICLE INSPECTION DIMENSION SHEET

				Record Actual Dimensions				
Dim	Min	Max	Go/No Go Gauge	1	2	3	4	5
Milling Section								
A-A	1.051	1.071		1.057	1.057	1.061	1.062	1.060
B-B	0.513	0.533		.522	.523	.525	.522	.520
C-C	R0.053	R0.073		0.063	.063	.063	.063	.063
D-D	2.465	2.485		2.474	2.474	2.478	2.478	2.477
E-E	3.550	3.560		3.555	3.555	3.554	3.554	3.554
F-F	0.315 x 0.065	0.335 x 0.085		.330 x .07	.33 x .07	.33 x .07	.33 x .07	.33 x .07
G-G	1.990	2.010		2.001	1.997	2.002	2.001	2.000
H-H	0.625	0.630		.626	.626	.626	.626	.626
I-I	R0.645	R0.660		.650	.650	.650	.650	.650
J-J	R0.220	R0.280		.250	.250	.250	.250	.250
K-K	0.620	0.630		.001	.000	.000	.001	.001
L-L								
M-M								
N-N								
O-O								
P-P								
Q-Q								
R-R								
Accept/Reject								

Measured by:	<i>[Signature]</i> 15-03-10	Date:	
Audited by:	BAS 14 9-89	Date:	15/03/11
Preliminary Approval:		Date:	

Rev	Date	Change	Revised by	Approved
A	14.07.07	New Issue	KJ <i>[Signature]</i>	<i>[Signature]</i>

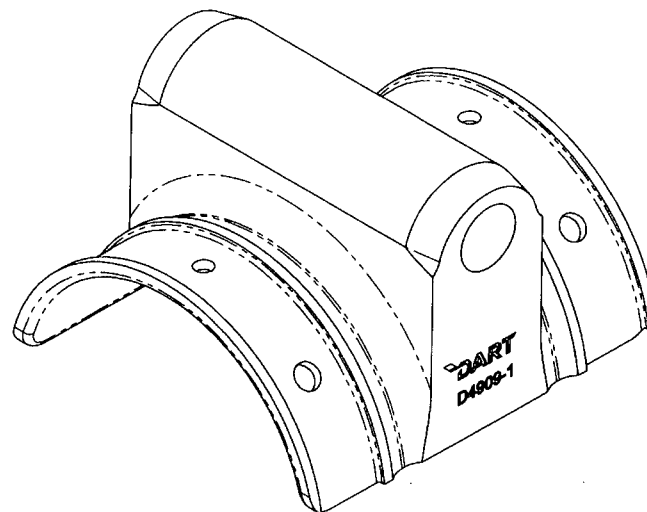
DART AEROSPACE LTD		Work Order:	130094
Description: Support		Part Number:	D4909-1
Inspection Dwg: D4909	Rev: A	Page 1 of 1	

FIRST ARTICLE INSPECTION DIMENSION SHEET

Dim	Min	Max	Go/No Go Gauge	Record Actual Dimensions				
				6	2	3	4	5
Milling Section								
A-A	1.051	1.071		1.062				
B-B	0.513	0.533		.525				
C-C	R0.053	R0.073		.063				
D-D	2.465	2.485		2.477				
E-E	3.550	3.560		3.559				
F-F	0.315 x 0.065	0.335 x 0.085		.33 x .07				
G-G	1.990	2.010		2.002				
H-H	0.625	0.630		.626				
I-I	R0.645	R0.660		.650				
J-J	R0.220	R0.280		.250				
K-K	0.620	0.630		.001				
L-L								
M-M								
N-N								
O-O								
P-P								
Q-Q								
R-R								
Accept/Reject								

Measured by:	P 15-03-10	Date:	
Audited by:	DAS 14 9-89	Date:	15/03/11
Preliminary Approval:		Date:	

Rev	Date	Change	Revised by	Approved
A	14.07.07	New Issue	KJ	AS



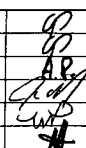
D4909-1 SUPPORT

NOTES:

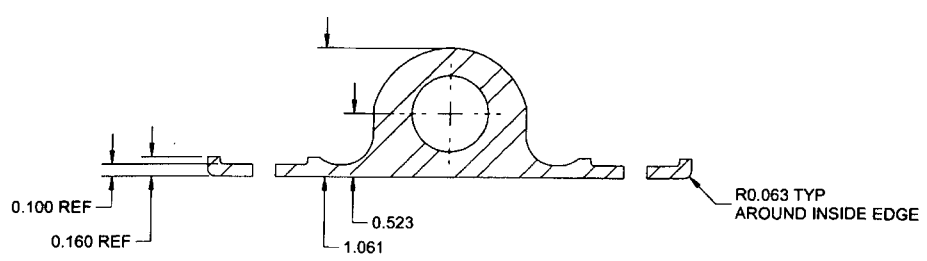
- 1) MATERIAL: MAKE FROM D4909-1TRN
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY WITH DART LOGO AND P/N "D4909-1" IN INDICATED AREA
USING 0.125 HIGH X 0.010-0.020 DEEP LETTERING PER DART QSI 044 6.3,
IDENTIFY WITH DART B/N PER DART QSI 044 6.1
- 7) WEIGHT: 1.90 lbs

130094 MJS
1502-23

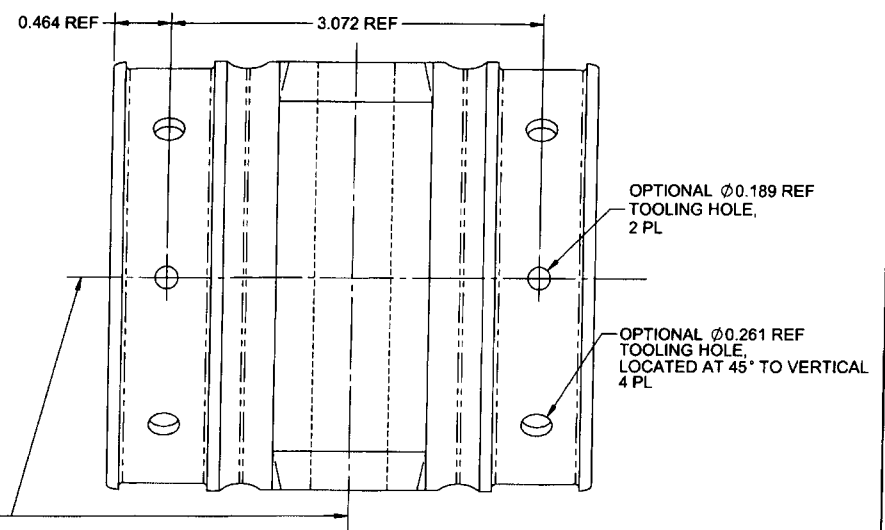
RELEASED
2013-08-06
WJ

A	NEW ISSUE	CP	13.04.08
REV.	DESCRIPTION		BY DATE
DESIGN		DART AEROSPACE LTD	
DRAWN		HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO. D4909	REV. A
MFG. APPR.			SHEET 1 OF 3
APPROVED		TITLE	SCALE
DE APPR.		SUPPORT	NTS
DATE		13.04.08 COPYRIGHT © 2013 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

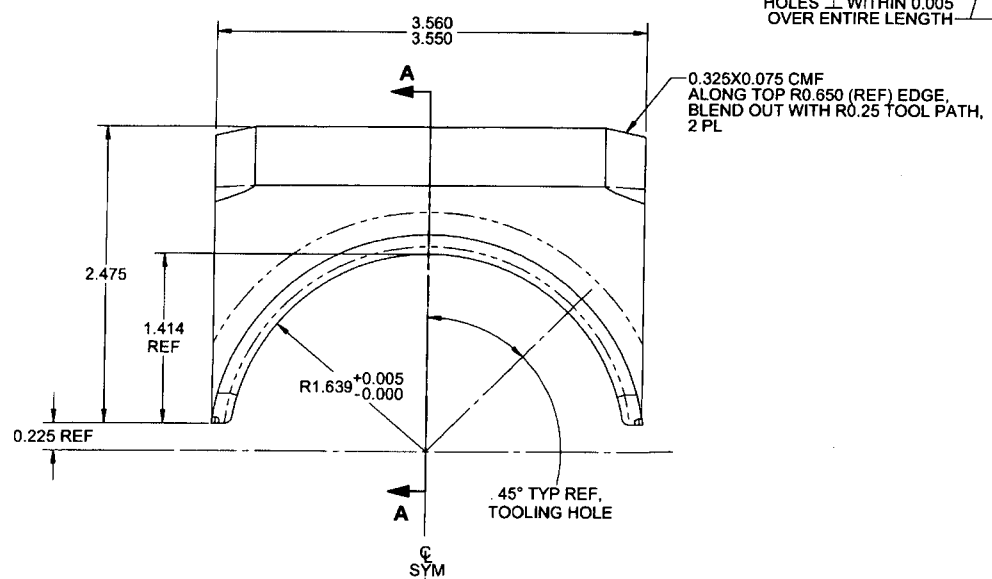
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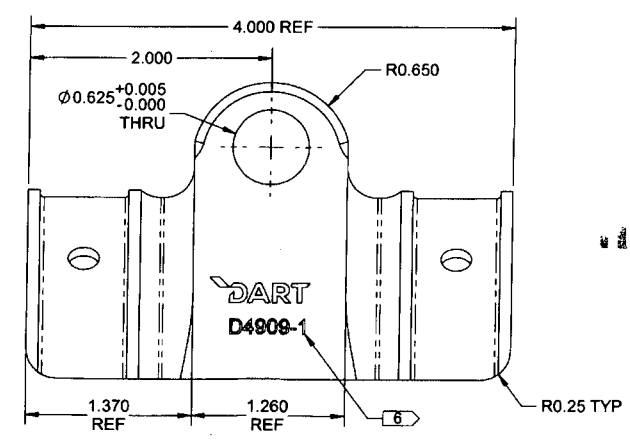
SECTION A-A
SCALE 1X



HOLES $\perp$ WITHIN 0.005 OVER ENTIRE LENGTH



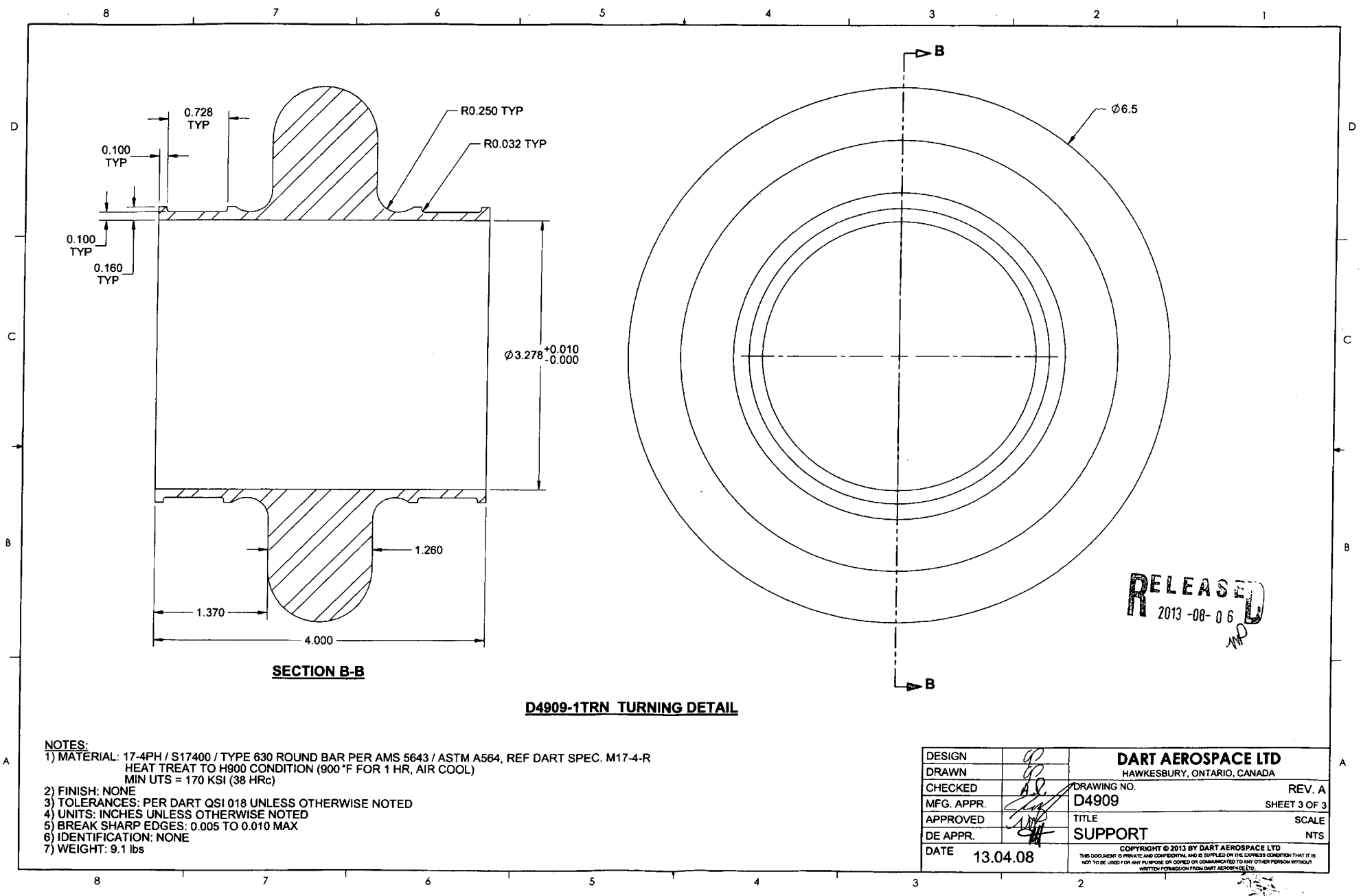
D4909-1 SUPPORT



RELEASED
2013-08-06

DESIGN		DART AEROSPACE LTD	
DRAWN		HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. A
MFG. APPR.		D4909	SHEET 2 OF 3
APPROVED		TITLE	SCALE
DE APPR.		SUPPORT	NTS
DATE	13.04.08	COPYRIGHT © 2013 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

8 7 6 5 4 3 2 1



SECTION B-B

D4909-1TRN TURNING DETAIL

- NOTES:
- 1) MATERIAL: 17-4PH / S17400 / TYPE 630 ROUND BAR PER AMS 5643 / ASTM A564, REF DART SPEC. M17-4-R
HEAT TREAT TO H900 CONDITION (900 °F FOR 1 HR, AIR COOL)
MIN UTS = 170 KSI (38 HRC)
 - 2) FINISH: NONE
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
 - 6) IDENTIFICATION: NONE
 - 7) WEIGHT: 9.1 lbs

DESIGN		DART AEROSPACE LTD	
DRAWN		HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. A
MFG. APPR.		D4909	SHEET 3 OF 3
APPROVED		TITLE	SCALE
DE APPR.		SUPPORT	NTS
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